Saskatchewan
Agriculture

Guidelines for Planning the Rural Home

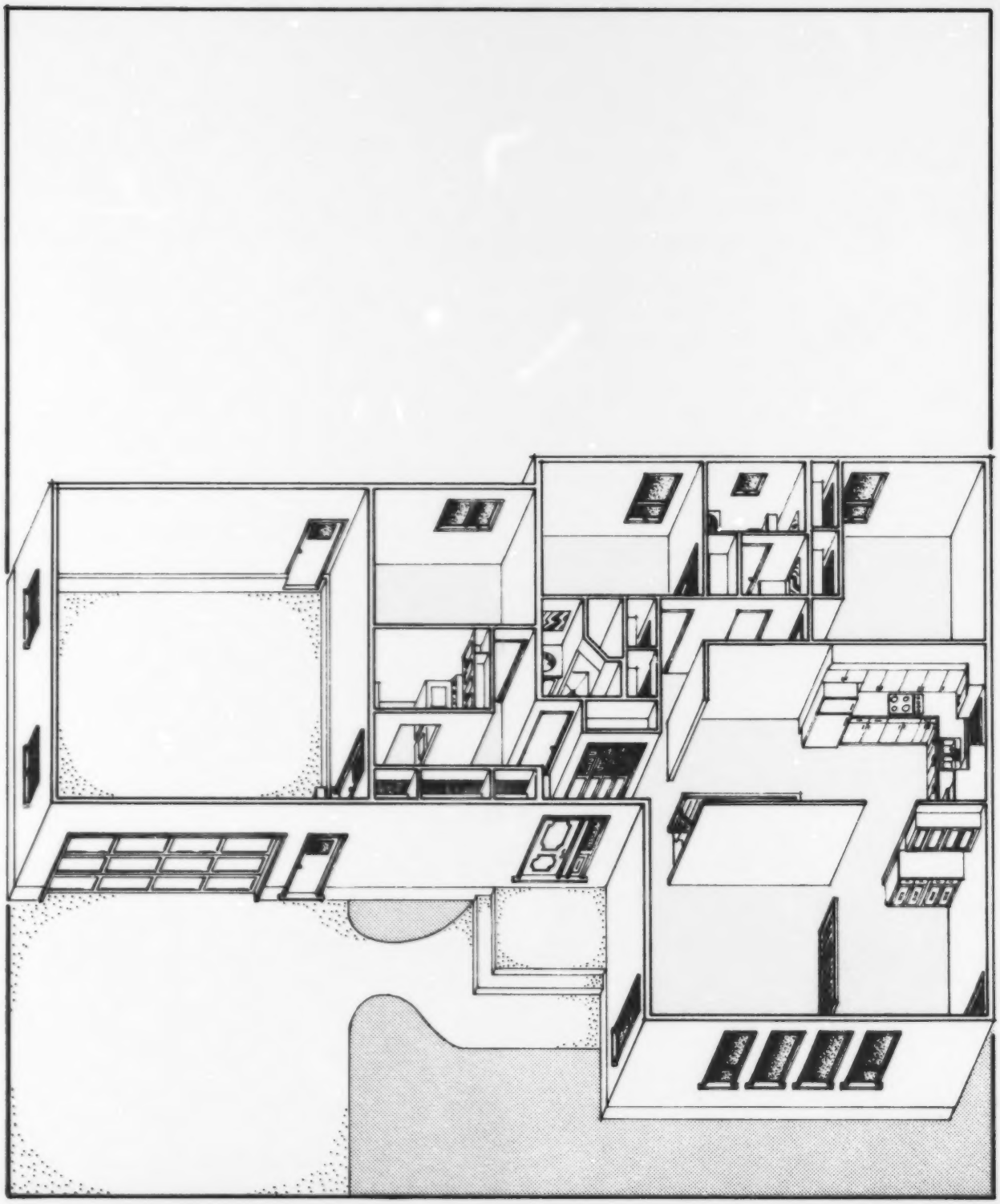

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Table of Contents

Page

1. Introduction
1. Farmstead Planning
1. Family Requirements
2. Evaluating Floor Plans
2. Traffic Patterns
2. Entryways
3. Stairwells
4. Activity Zones
4. Working Zone
4. Kitchen
5. Farm Business Center
6. Laundry Rooms
7. Sewing Centers
8. Storage
8. Sleeping Zone
8. Bedrooms
9. Bathrooms
11. Living Zone
11. Living Room
12. Family Room
12. Dining Room
12. Sizing Rooms
12. Openings
13. Foundations
13. Energy Conservation
13. Building a House
14. Remodelling
15. Basement Development
16. Planning for Expansion

Introduction

Lifestyles greatly influence housing needs. When planning a farm home, it is important to recognize that rural living differs from urban living. Family requirements, budgets, and short and long term goals vary. It is essential to incorporate specific design features into the overall plan of the farm home to ensure that needs are met and that differences are acknowledged.

This publication presents the general principles and detailed requirements involved in the location, design and construction of the farm house.

Farmstead Planning

The layout of the farmstead is important when selecting a suitable location for the house.

The house should be the first major building reached when approaching the farmstead from public roads (Fig. 1). It should be obvious where guests can park; sidewalks and landscaping can be used to lead visitors to the entrance. Avoid planting shrubs, trees and crops that might obstruct the view of the road.

Avoid a site where underground flow or a high water table can present a problem for the basement, footings and foundation. For good drainage, the site should slope in all directions away from the house.

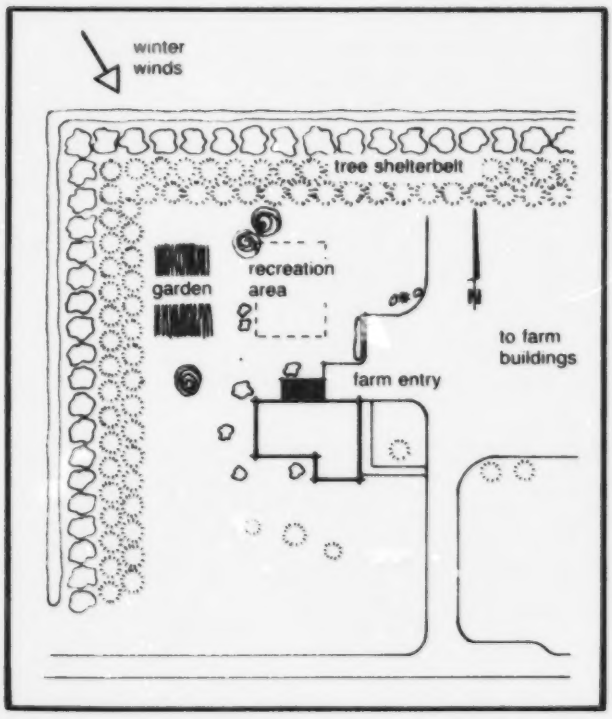


Figure 1. House location in relation to farmstead

Make sure basement depth and basement window locations provide allowance for topsoil which might be required to support lawns and plantings.

The back entry of the home should be located to provide convenient access to other farm buildings, the road and the garden. There should be a view of the farmyard and service areas from the kitchen which often makes it desirable to have two kitchen windows. If a play area for children is planned, locate it so it can be seen from the kitchen windows.

Trees provide shelter and control wind. However, a windbreak will create a snow drift; therefore, locate the house at least 200 ft. (60 m) away to avoid a drift. If the farmstead has a scenic view, orient the house so the view is visible from the living room, dining room or family room.

Locate doors, windows and outdoor living areas to take advantage of cool summer breezes. The house entrance should be protected from cold wind and snow.

In most areas, the house should be located southwest of livestock facilities to avoid odors carried by prevailing winds. Other choices in order of preference are west, northwest and southeast. Avoid northeast locations. The house should be 300 ft. (90 m) from the livestock operation regardless of the direction.

The booklet "Farmstead Planning", available from the local Saskatchewan Agriculture agricultural representative, discusses planning a farmstead in greater detail.

Family Requirements

Select a house plan that meets the requirements and expectations of the family. To start the planning process, consider the family's lifestyle, likes, dislikes, and make a list of the family's needs and wants. A list will form the basis from which to evaluate and select a house plan.

Under needs, include the family's ideas on rooms, storage closets, appliances, equipment, furniture, and other features regarded as necessary. Under wants, list the items that are desirable but not necessary.

Some activities will be the type in which several family members will participate, such as group conversation, reading, and games. Other activities may be more personal, such as weaving, sewing, ceramics, and photography.

The size of the family and the stage of life cycle influences house design. Whether the family is young or mature, plan the home for the future. When children are leaving home or retirement years are near, a two bedroom home may be a better choice.

Budget restrictions and size of farming operation also influence the final design.

Evaluating Floor Plans

The floor plan of a house largely determines how convenient, liveable and satisfying it will be. Small houses require more careful planning.

The size and shape of rooms influence how a housing unit will function. The size of a room does not always indicate the amount of usable space. Poorly located doors, windows, or closets can reduce the flexibility of a room. Look for plans that allow greater use of space, good traffic patterns and maximum use of storage areas.

Traffic Patterns

When evaluating a plan, visualize how traffic will move through the house. The traffic flow throughout the home to individual rooms should be direct and convenient (Fig. 2). Traffic in defined spaces should be direct to the furnishings or storage used the most in daily activities. Traffic should not travel corner to corner through a room, as it may disrupt activities within the room, or interfere with the furniture grouping. Short routes from point to point eliminate wasted space.

Entryways

Function is important to the entry. The exterior location should be convenient to play areas, the garden, parking areas and other farm buildings. On the interior, the location must serve to begin and end a traffic plan. Hallways are needed to maintain privacy and quietness for the sleeping zone, but the length should be kept to a minimum to save space.

The main entry should be located near the center of the house to facilitate traffic flow. Once the location is established, consider the room into which the traffic enters. If the entrance is located in the living room rather than at a center hallway, locate the entry at the end of the living room to enhance the furniture arrangement (Fig. 3). The family should be able to go to the living or sleeping areas without interfering with activities in the work area.

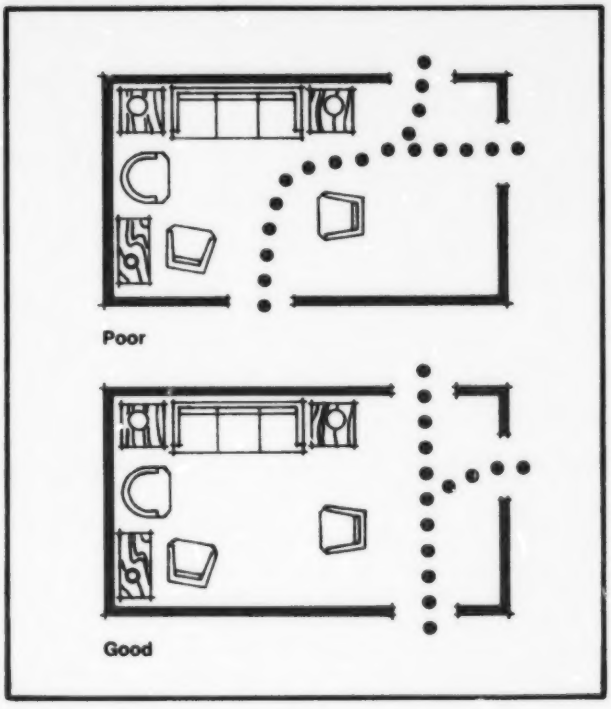
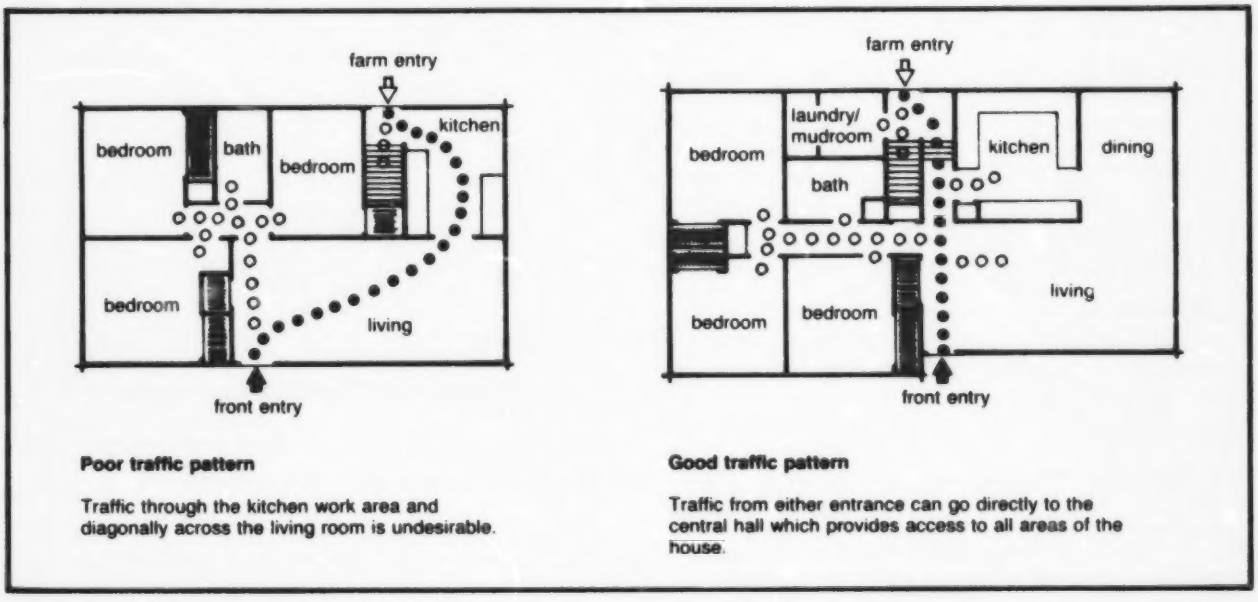


Figure 3. Traffic flow and doorway location



Poor traffic pattern

Traffic through the kitchen work area and diagonally across the living room is undesirable.

Good traffic pattern

Traffic from either entrance can go directly to the central hall which provides access to all areas of the house.

Figure 2. Traffic patterns

The farm entry provides access to the kitchen and mudroom. Easy access to the kitchen is important at mealtime and for carrying in groceries. If the service entry must go through the kitchen then traffic should bypass the meal preparation area (Fig. 4).

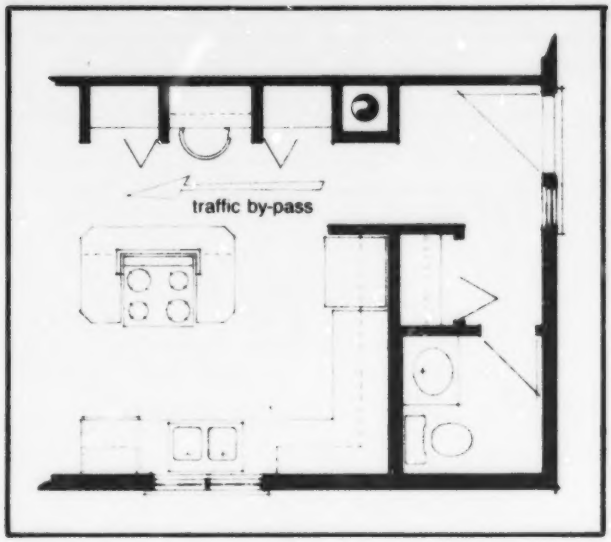


Figure 4. Traffic by-passes the work triangle

The farm entry needs space for the removal and storage of work clothing. A wash-up area is considered essential to this location. A walk-in shower should also be considered and is preferred to a tub. If space is not available at the entry level, then plan a bathroom in the basement near the stairwell landing and beneath plumbing on the main floor. Provision should be made for the air to circulate so that damp clothes and shoes will dry. A built-in, well-ventilated boot storage bench keeps boots out of sight and provides a place to sit. Place boots on a rack over a removable drip tray.

Farm families should consider a well-planned single entry that accommodates the needs of guests and family. The entry will be more functional if it is spacious (Fig. 5). A 5 ft. x 5 ft. (1.5 m x 1.5 m) area is a recommended minimum. An alternate exit may be provided by french doors onto a deck or patio. Ample closet space for family and guest coats as well as storage for boots is necessary.

Stairwells

Stairways extend traffic patterns to different levels of a home. For example, the lower level of a home may be used primarily for utilities, cold storage room, seasonal clothing storage, the mechanical room and a mudroom. The stairwell may then be located near the farm entrance to facilitate moving items down the stairs and to eliminate traffic flow through the house (Fig. 6). If the lower level is developed for recreation, or perhaps sleeping, and used daily, it is best to locate the stairwell centrally to allow for circulation and easy access. The same principle applies to the

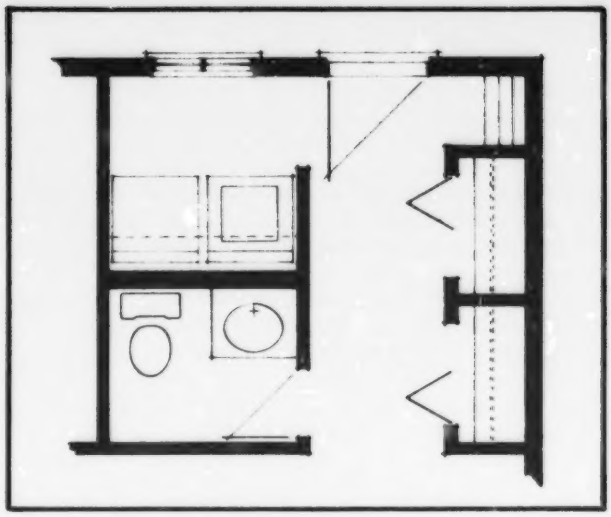


Figure 5. Well – planned single entry

upper level of a two storey home so that family members can go to the bedrooms without crossing other rooms. Space is used more efficiently if the stairs to the second floor are located above the stairs to the basement.

In the rural home it is most convenient to have the stairwell located inside the farm entrance. A grade level entry with direct access to the basement is recommended. A landing followed by two or three steps to the main level is preferable over outside steps. The stairwell can also be located in an attached garage.

A minimum stairwell width of 36 in. (900 mm) is recommended and a 40 in. (1000 mm) width is desirable.

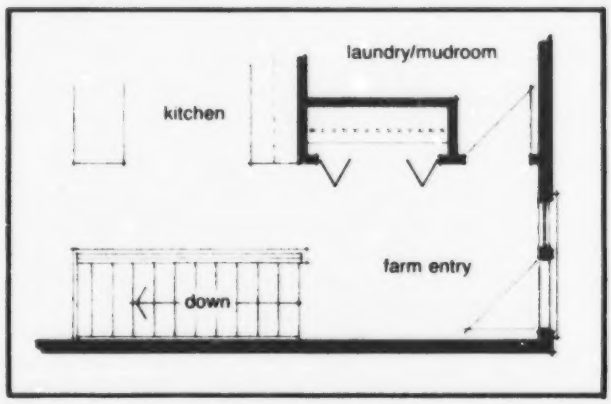


Figure 6. Stairway near service entrance

Activity Zones

Every home has three zones: a working zone, a private or sleeping zone, and a living zone (Fig. 7). When studying house plans, look for three zones that are well defined and reasonably separate.

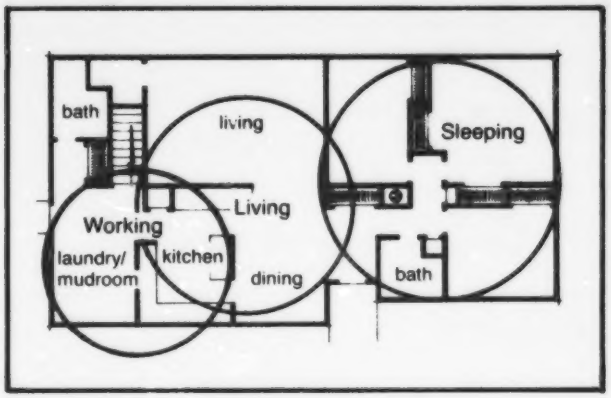


Figure 7. Zones of a house

When planning the development of two or more levels in the home, vertical zoning is important. Essentially, quiet areas should be located over quiet areas and noisy areas over noisy areas (Fig. 8). When planning a new home, consider the development of a second level (basement or future second storey). Otherwise, the future development may be difficult due to the location of the ductwork, furnace, and plumbing pipes. Poorly located windows and stairwells can also create problems.

Plan the locations of the chimney, stairwell and teleposts to maximize the layout possibilities. For example, if including a fireplace on the main floor, allow space for a chimney run from a second fireplace in the recreation area. Draw several sketches according to family requirements before finalizing plans.

Working Zone

The working zone includes the kitchen, home business and sewing center, laundry room, and storage areas. Informal eating areas may be included as well. The working zone is the noisiest area of the home because of the operation of appliances in the kitchen. As well, this area often looks cluttered. There may be two or three work areas in the house. Try to avoid a direct view into the work areas from the living areas. Each part of a work area should be planned for efficiency and developed so they are convenient and easy to maintain.

Kitchen

The kitchen is the most lived in area during the day. Plan the kitchen to provide adequate storage and work space for meal preparation and clean-up. It may also have a dining and/or family living space and a small desk for organizing family business records.

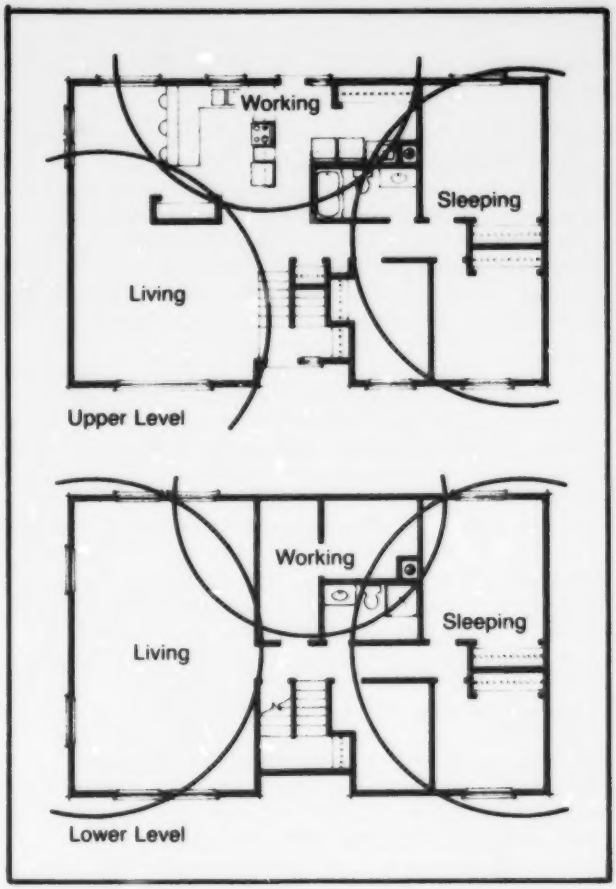


Figure 8. Vertical zoning

One of the first decisions to make about the kitchen is how the family intends to use the space. Is it a family kitchen where young children can play? Is it being planned for a retirement home? Is the kitchen being used by more than one person at the same time? Will the eating space be part of the kitchen? Will it be used for food preparation and preservation for a large number of people?

Consider the location of the kitchen in relation to the areas where food may be served. The first consideration should be in relation to where most of the family meals are served, then to the more formal dining area, and finally, to the other areas such as the patio.

The keys to efficient kitchen design are: logical and adequate storage space; ample, properly placed counterspace; properly placed appliances; good natural and artificial lighting.

The Extension Service publication "Kitchen Planning Guidelines for the Rural Home" presents in greater detail the principles involved in kitchen design.

Farm Business Center

When building a new home, provision should be made for an office in the floor plan.

A business center should be considered as a separate location for maintaining accounts and records, financial planning, cheque writing, and storing semi-valuable papers. Business is likely to be conducted more promptly and more completely in a well organized center. It should contain all records and supplies necessary to complete business transactions. Acquaint family members with its organization so information can be found when needed.

Several areas in the home are suitable for the office; however, a quiet location away from group activities is desirable. Locate the business center to be convenient for the person who will use it the most. Also, consider frequency of use, amount of business or paper work done and when the work is done.

If the homemaker is keeping records, an office located in or near the kitchen is recommended since most homemaking activities occur there. Once a suitable desk is organized, the area can double as a planning center. Planning centers are generally used for organizing recipes and grocery lists.

A location near the farm entry is preferred if the farmer requires access to records during the day (Fig. 9). If bookkeeping is done in the evening, consider other locations. If people other than the family are involved in the business, a direct entrance to a separate room is desirable. Consider a separate office building adjacent to the house.

The business center is often planned with enough work space for another activity such as a sewing center (Fig. 10) or a guest bedroom (Fig. 11).

If a home is being remodelled and space is limited, a desk located in a closet is a workable alternative (Fig 12). Bi-fold doors can be used to conceal the area when not in use. A 6 ft. (1.8 m) opening is required to avoid interfering with file drawers. A 36 in. (900 mm) deep closet is suggested so a chair can be kept at the desk when the doors are closed.

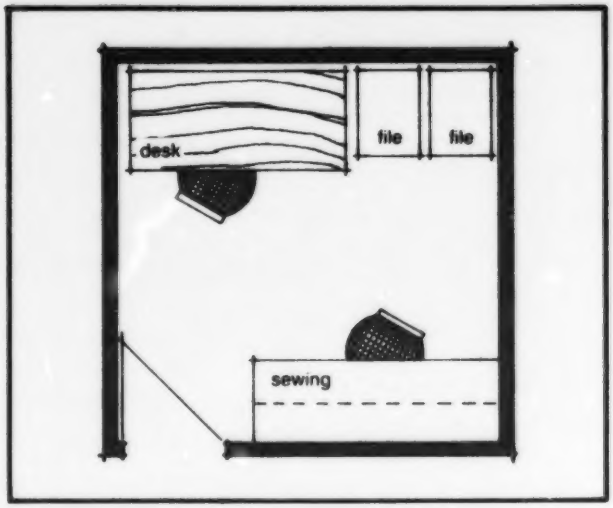


Figure 10. Office and sewing

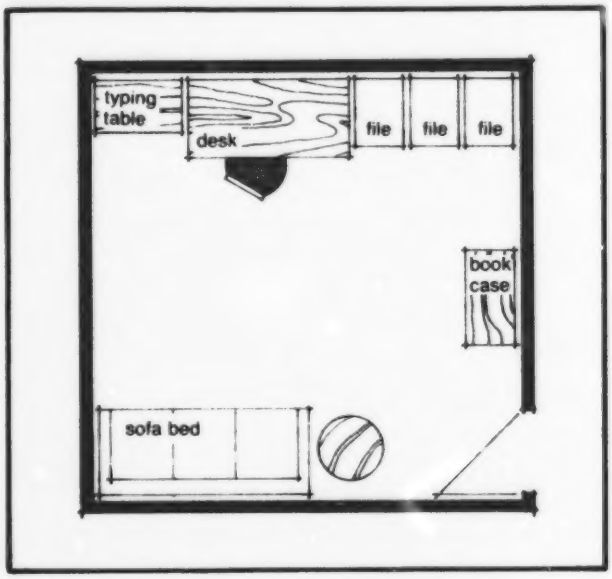


Figure 11. Office and spare bedroom

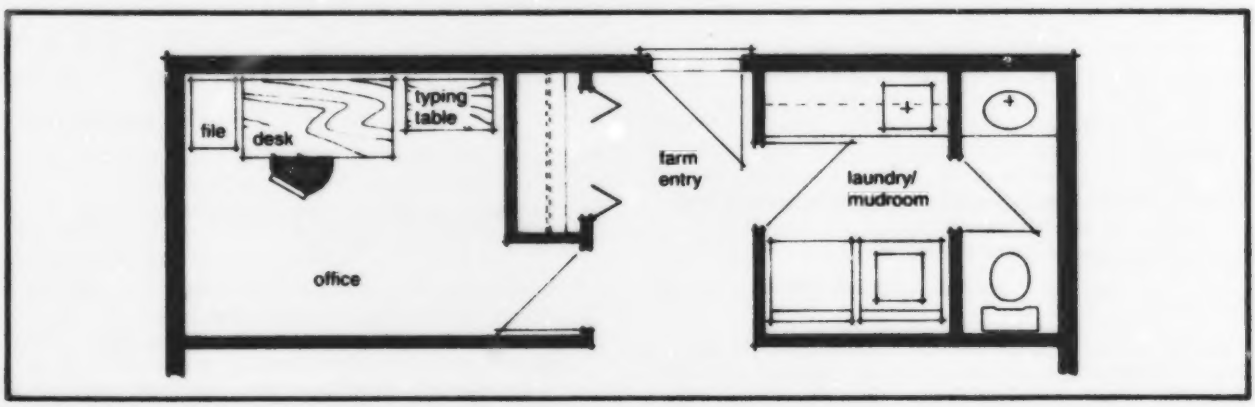


Figure 9. Office at back entrance

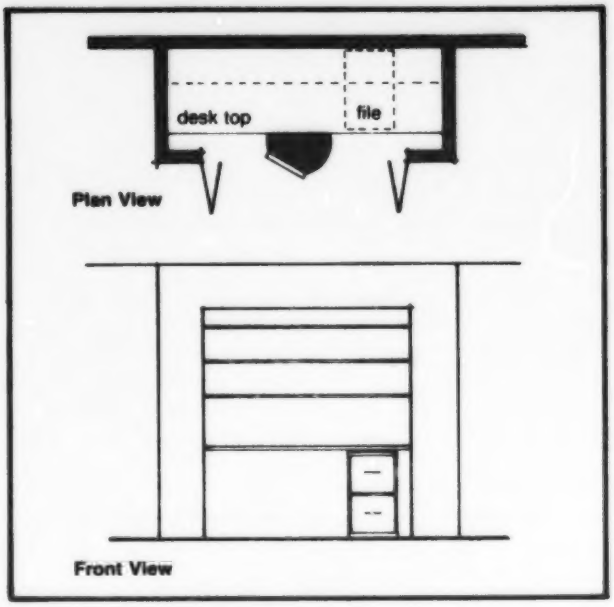


Figure 12. Office in a closet

The business center has three main parts: a large writing surface for organizing and conducting work; storage space for books, papers and files; and additional storage space for small equipment and office supplies.

The following are some furniture and space recommendations:

- a desk that is 28 to 30 in. (700 to 750 mm) high and a comfortable chair 17 to 20 in. (425 to 500 mm) high with good back support; a desk can be constructed of a door with a small chest or file on either side, or a plywood top joined by two filing cabinets; a chair with casters is convenient

- lighting located to eliminate shadows on the work surface; for right handed people, light should come from the left

- space for a filing cabinet to store items such as permanent records, addresses and account books; drawers should be 13 1/2 to 16 1/2 in. (340 to 420 mm) wide and 11 1/2 in. (290 mm) deep to accommodate file folders and record books

- space for unfinished business and current records usually on the desk or in built-in shelving units; store current files conveniently so that materials can be found as required

- containers to store supplies such as clips, rubber bands and pencils

- a bulletin board or blackboard; cover the wall behind the desk with corkboard when space is limited

- telephone, calendar and a waste basket

- typewriter, adding machine and a calculator

- a safe

Laundry Rooms

Laundry rooms contain the washer and dryer and often the freezer, office, sewing area, or mudroom.

Laundry rooms can be located near the kitchen and/or bathroom, at the farm entry, or in the basement.

The ideal location is near the kitchen where most homemaking activities occur. When laundry appliances are situated in the kitchen, locate them away from the food preparation area for sanitary reasons.

An alternate location for laundry appliances is near the bathroom since most clothing that goes into the family wash is collected and stored in the bedroom-bathroom area (Fig. 13). Plumbing lines are also close and the bathroom sink can be used for soaking and stain removal. Wide hallways or an extra large closet can provide adequate space to store laundry equipment. Folding or sliding doors can be used to screen the appliances when not in use. A separate room is desirable, especially if combined with a sewing center. If noise is a concern, separate it from the living areas.

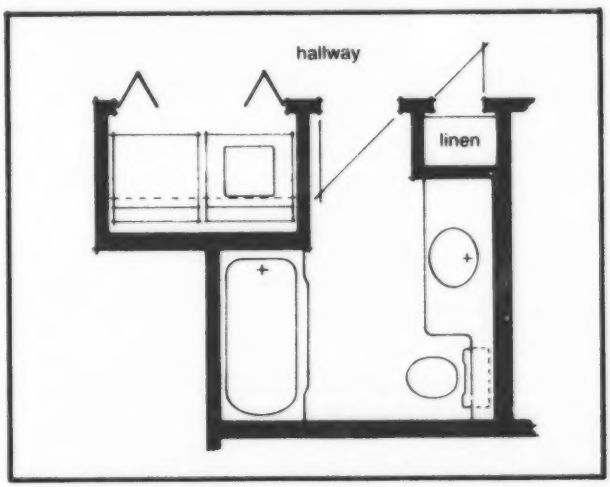


Figure 13. Laundry near bathroom

Laundry appliances located at the farm entry are handy if the area doubles as a mudroom or garden work area, since dirty clothing can be disposed of immediately. This location is also convenient because of easy access to the outside if clothes are sun dried.

The laundry center is frequently placed in the basement. The advantages of this location are separation of noise from the rest of the house and proximity to plumbing. However, this location makes it inconvenient to combine laundering with other household activities. Numerous trips must be made up and down the stairs before, during, and after laundering. Incorporating a clothes chute saves steps. Adequate lighting, preferably fluorescent, is important.

The laundry area requires storage space. Wall cabinets 12 in. (300 mm) deep above laundry appliances or base cabinets 24 in. (600 mm) deep are recommended. Overhead storage is preferable to keep supplies beyond a child's reach. The bottom of the overhead cabinets should be a minimum of 60 in. (1500 mm) from the floor to eliminate interference when opening the washer.

Storage for soiled laundry should consist of several baskets rather than one large hamper to save sorting on wash day. A tipout or roll-out vented hamper incorporated into a cupboard saves space. Other design requirements are:

- an automatic washer and dryer require a minimum of 66 in. (1650 mm) of wall space at a 36 in. (900 mm) depth (Fig. 9)

- if washer and dryer are placed in a closet, provide a minimum of 66 in. (1650 mm) of wall space at a 42 in. (1050 mm) depth; a minimum 60 in. (1524 mm) wide bifold door is required (Fig. 13)

- place the dryer on the right side of the washer, if possible, and allow 36 in. (900 mm) of standing room in front to do work

- provide a minimum door width of 32 in. (810 mm) to allow appliances to be moved through

- a laundry tub is not essential with an automatic washer, but when the laundry area is located in the basement, a tub is convenient for stain removal and for use with a suds saver washer

- a counter for pretreatment, stain removal and folding clean clothes; a 3 ft. x 5 ft. (.9 m x 1.5 m) table is recommended

- a portable or built-in ironing board requires an area, including work space, of 4 ft. 9 in. x 6 ft. (1.425 m x 1.8 m); a heat-proof shelf for the iron to sit on and an electrical outlet nearby should be included

- a clothes rack for drip drying and for hanging clothes after ironing

- a fan if the laundry room does not have a window

Sewing Centers

Consider individual needs when planning the size and location of the sewing area.

The laundry room is a practical location for the sewing area as clothing can be mended before being placed in the washer (Fig. 14). The table used for laundry sorting and folding can also double as a cutting surface.

If family clothing is made at home, a separate sewing room is recommended. A location near the kitchen is desirable where other homemaking activities occur. If sewing is done in the evening, a location in or near the family room is a good idea.

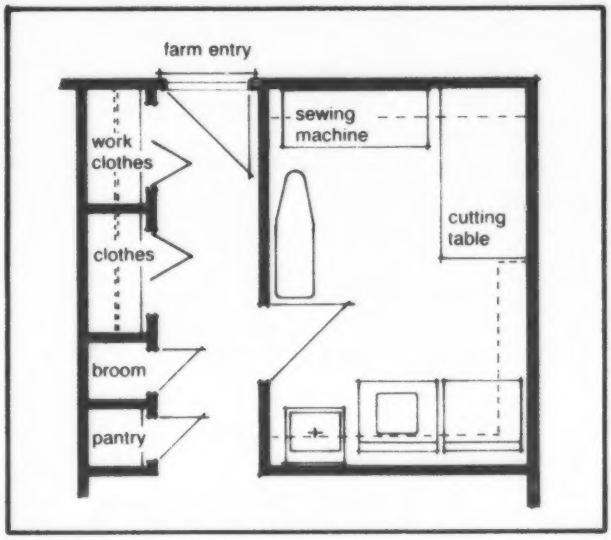


Figure 14. Laundry and sewing area

Other location possibilities include the bedroom or the basement. Most sewing activities can be done in a sitting position. Arrange supplies and equipment so it is unnecessary to get up from the chair each time a sewing supply or pressing is needed.

The most practical sewing arrangement is in a "U" shape (Fig. 14). Place equipment so that work can proceed from right to left for a right handed person and reverse this sequence for the left handed individual. The "L" shape, single wall or parallel wall arrangement may require moving the chest or ironing board to make a "U" arrangement. The "U" requires at least 24 in. (600 mm) in front of the table, sewing machine and ironing board. A flat area to the right of the sewing machine provides a place for fabric. The ironing board adjusted to seated height is placed to the left of the machine to complete the right to left flow of work.

The following should be considered when planning a sewing center:

- a sewing table that is a minimum of 24 in. (600 mm) deep, 60 in. (1500 mm) long and 28 in. (700 mm) high with open shelving on either side and a top finished with cork board to place pins while sewing

- a bulletin board situated behind the sewing table to place patterns at eye level

- a cutting surface that is 36 in. (900 mm) or more wide, 72 in. (1800 mm) long, and 35 to 38 in. (890 to 960 mm) high located beside the sewing table; a clearance of 24 in. (600 mm) around the table to provide space for activities

- a space about 4 ft. 9 in. (1.45 m) x 6 ft. (1.8 m) for the ironing board and work space; an ironing board that adjusts to various heights is handy for pressing in a sitting position

- a comfortable seat 16 in. (400 mm) from the floor; a swivel chair on casters is a real convenience

- deep cupboards to store wide lengths of fabric, drawers for patterns, and shallow drawers for pins, scissors and tapes

- closet space for garments that are being constructed or require mending

- general and task lighting to illuminate the work surface; task lighting located to the left of the needle. If the sewing center is near a window, equipment should be placed so the light shines over the left shoulder of the person sewing

- a mirror 18 in. (450 mm) wide and 60 in. (1500 mm) long, placed so the top is 72 in. (1800 mm) from the floor

- surfaces chosen in light colors to increase the reflection of light and to reduce eye strain

- a smooth floor that is easily swept; deep pile rugs and pins do not mix

- a sink nearby for sponging and damp pressing clothes or fabrics

- electrical outlets placed for convenience

Storage

Storage is often overlooked in the design of the home, but is important to any layout. Closets are essential for linen, brooms and cleaning supplies, farm work clothes, guest clothes, and of course, the bedrooms.

Sleeping Zone

The sleeping zone includes space for sleeping, dressing and personal hygiene. If the sleeping area is on the second floor, provide a half bath on the main floor. Sleeping areas should be separate and sound insulated from the rest of the house by hallways, bathrooms and closets.

Bedrooms

Bedrooms must accommodate a bed, dressing area, and furniture.

Generally, 18 to 24 in. (450 to 600 mm) is allowed for making the bed (Fig. 15). Allow 36 in. (900 mm) in front of the chest of drawers and 36 to 48 in. (900 to 1200 mm) for a dressing circle.

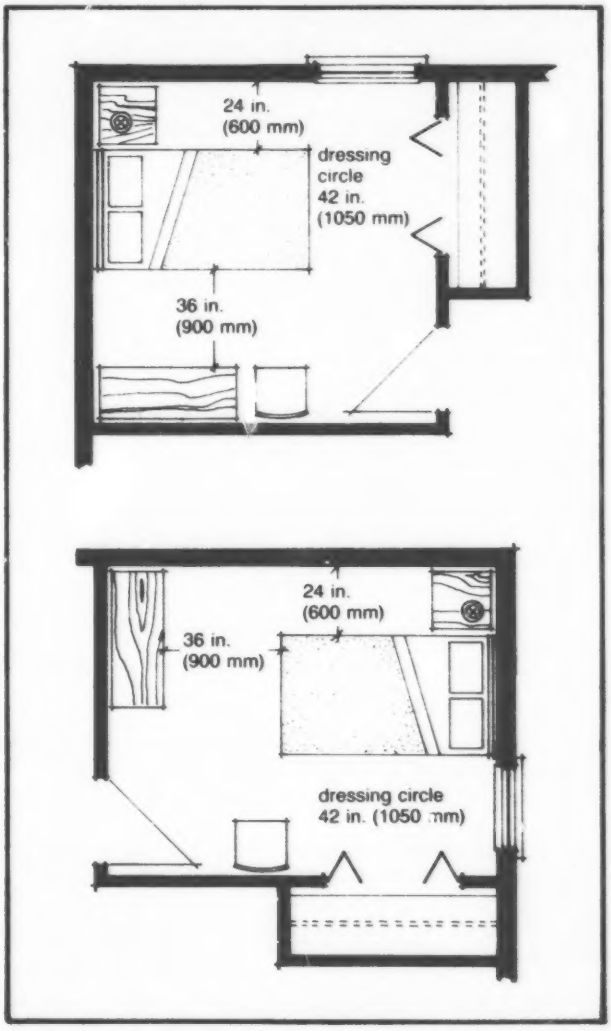


Figure 15. Space requirements for bedrooms

Bedrooms are usually grouped together in one area, but they may be located anywhere provided each bedroom has privacy. A master bedroom may be at the opposite end of the house from the children's bedrooms. A bedroom used for guests, employees or relatives may be separate from the family bedrooms.

A separation may add to the cost because of the extra hallway and bathroom. However, there may be no extra cost if a bedroom can be planned near the farm entry to use its entrance hall and bathroom.

When locating bedrooms, consider the following:

- privacy of sound with sound resistant construction, sound absorbing furnishings and distance

- privacy of sight by opening bedrooms off hallways instead of directly off another room; avoid a plan where a bedroom opens off the living room or where it is necessary to go through one bedroom to reach another bedroom

- two storey houses should have one bedroom on the first floor or a room that can double as a bedroom for the sick or elderly

- each bedroom should have access to a bathroom

- the location of a child's bedroom depends on the age of the child; young children need to be near their parents at night; if children's bedrooms are used for play, day supervision is easier if the bedroom is located near the kitchen; older children like quiet and independence, and prefer their bedrooms placed away from their parents; the lower level may be developed for older children

Bedrooms larger than the desirable size will add to the cost of the house, but they may reduce the cost of the house if used for such activities as studying, sewing or children playing.

A closet for two should have a minimum rod length of 8 ft. (2.4 m) with a minimum door width of 36 in. (900 mm).

Bedroom closets should be located adjacent to the room entrance but should not block the entrance to the room (Fig. 16).

High windows increase privacy but may give a feeling of being boxed in. Low windows with a sill 24 in. (600 mm) off the floor, permit a person lying on the bed to see out, but may make furniture arranging more difficult.

One window in each bedroom should be large and low enough to use as a fire escape.

Cross ventilation is desirable in all bedrooms.

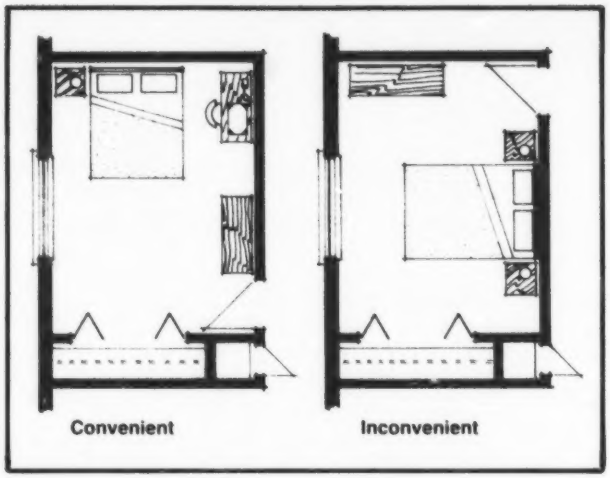


Figure 16. Bedroom closet near door

Bathrooms

Careful planning, good workmanship and quality fixtures provide convenience, safety and ease of maintenance. The following considerations will help to determine the size, location, arrangement and number of bathrooms to include in the floor plan.

- if it will be the main wash-up area, a location accessible from the farm entry would be an asset; in a small house, the family bathroom also serves as a wash-up area for workers returning from the field and by children returning from play

- a compartmentalized bathroom is convenient when more than one person needs to use the space at the same time (Fig. 17); to minimize materials cost, locate fixtures close together to concentrate plumbing connections

- the location of bathrooms depends on the number of bathrooms in the floor plan. Every plan should permit access to a bathroom without going through the living room. The main bathroom should be located near the bedrooms

Careful planning is especially required when having only one bathroom in a farm house. The bathroom should be accessible from all rooms through the hall as well as the back entry (Fig. 18). Another desirable feature is that the bathroom door is not visible from the living room or the guest entrance.

Older one and one-half or two storey farm homes usually have the bathroom on the second floor. When remodelling, plan to include at least a half bathroom on the main floor.

Several wash area arrangements for the service entry are shown in Figure 19.

Avoid placing the bathtub under the window as it is drafty in the winter and inconvenient to reach over the tub to open the window.

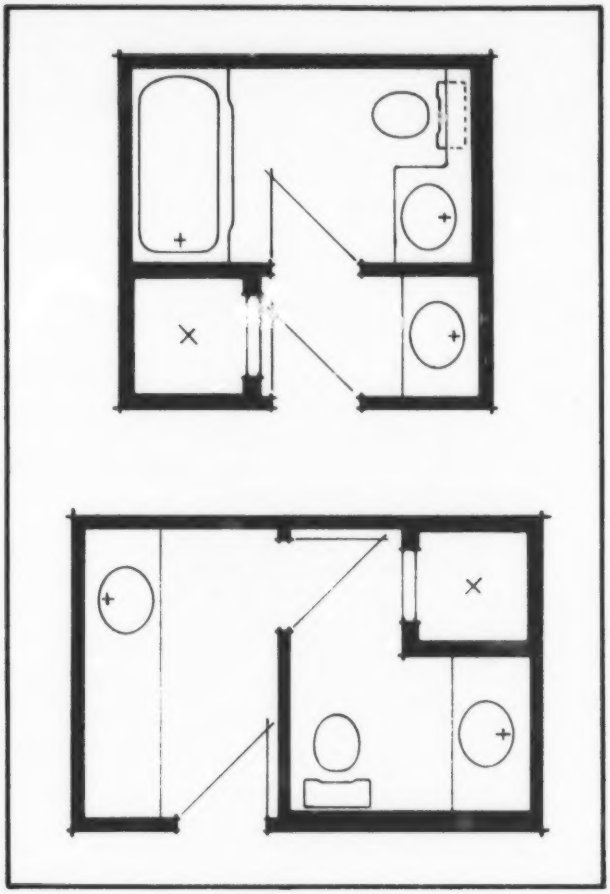


Figure 17. Compartmented bathroom

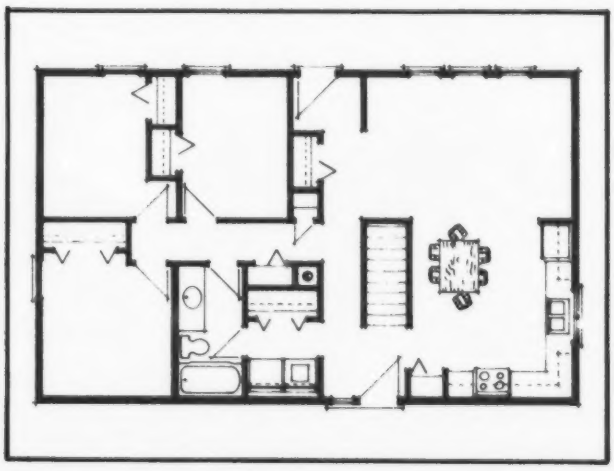


Figure 18. Single bathroom

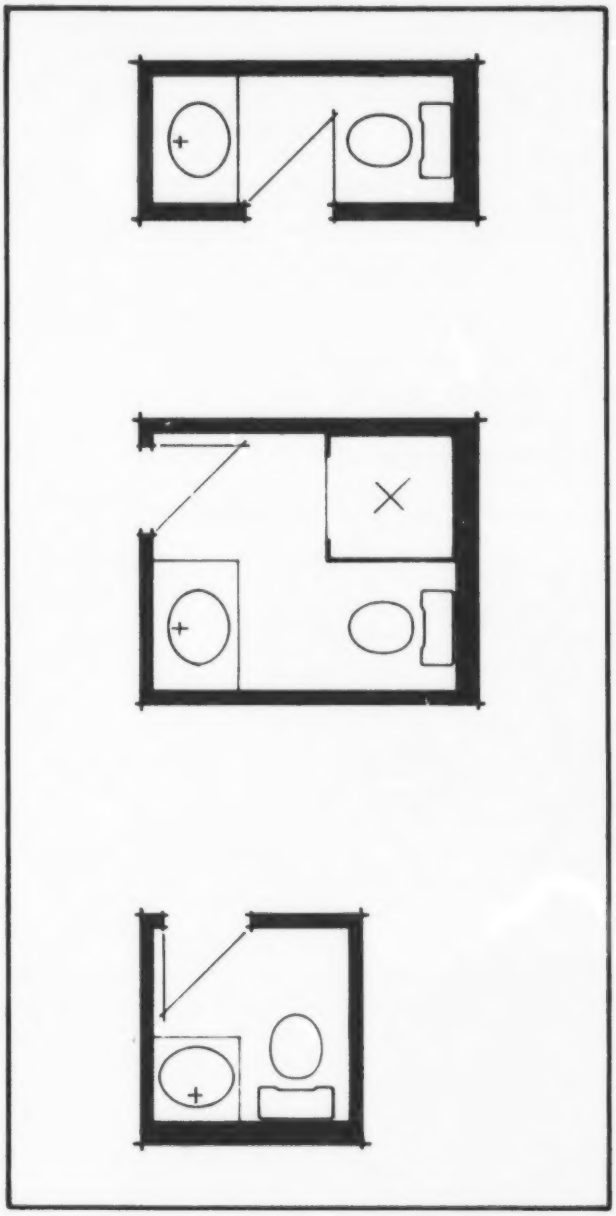


Figure 19. Wash area arrangements

Living Zone

The living zone includes space for family living, entertainment and recreation. People noises and sounds associated with entertainment are prevalent here. The number and size of the living areas should be determined by the family's needs and resources.

Living Room

Rooms for living reflect lifestyles and personal preferences. The living areas involve entertaining and are the show place of the home. If the family finds the living room comfortable, then chances are visitors will too.

Traditionally, the living room was at the front of the house, however it can be placed according to family preference. On the farm, the living room fits best at the side or the back overlooking a meadow or grove.

Living areas may be one large open space or may be subdivided into smaller areas for a range of activities (Fig. 20). Spacious, open areas have to be planned to segregate various activities. Dividers, furniture groupings or change of floor levels can be used to define areas.

A well-planned living room has no traffic passing through the room. Traffic intersecting the living space interferes with conversation or television viewing. A good plan has the doorways either grouped at a corner or in direct line with each other, with the traffic lane across one end of the room. A relatively small living room may be adequate if there is no through traffic.

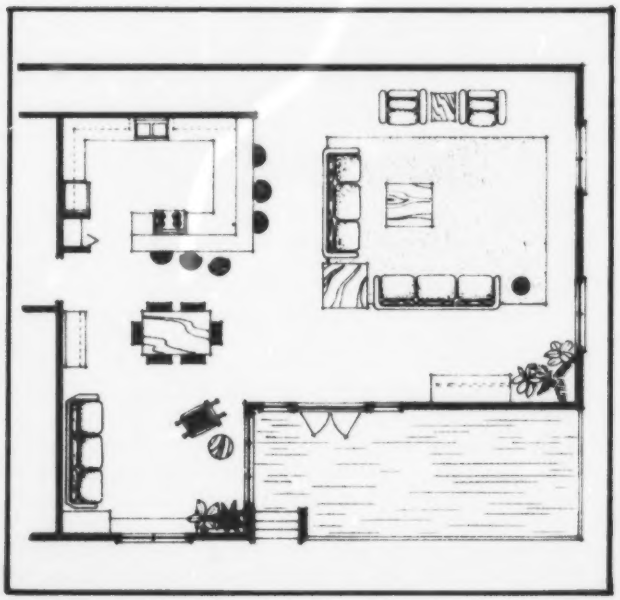


Figure 20. Open planning

Group seating areas are a part of at least one living area of the home. Major conversation groups are most satisfactory when they are more or less circular in shape and when the longest distance between people is 8 to 10 ft. (2.4 to 3.0 m). With a room width of 12 to 14 ft. (3.6 to 4.2 m), furniture placed along each side of the room will be the proper distance apart (Fig. 21). Living room widths greater than 14 ft. (4.2 m) are not recommended unless there is a traffic lane along one side or if the extra width is used for furniture that is not part of the conversation circle. Allow 12 in. (300 mm) between the front edge of a chair and edge of a coffee table for a person's feet and legs. In front of a chair or sofa, a clearance of 18 to 30 in. (450 to 750 mm) should be allowed. A fireplace is part of the conversation area and should be located so it can be seen by the people in the 10 ft. (3 m) conversation circle. There should be no traffic lane between the fireplace and the conversation circle.

The best length for a living room is that which will comfortably fulfill the need for conversation circles and the necessary additional space for circulation. For one conversation circle and circulation space, a length of 16 to 18 ft. (4.8 to 5.4 m) is adequate. For more than one conversation circle, the room should be at least 22 ft. (6.6 m) long.

Each family has individual activities that may alter the suggested sizes. The living room must be versatile. It lends itself to a combination of activities, such as living-bedroom, living-play, living-music, living-study, and living-dining.

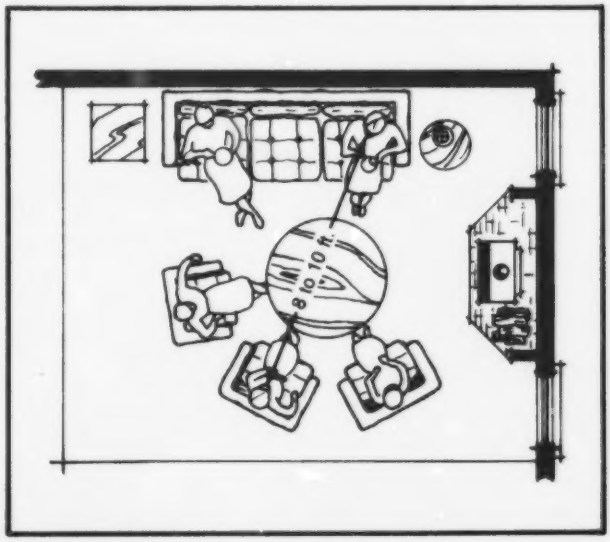


Figure 21. Conversation circle

Family Room

A family room allows the separation of active and passive activities. Plan the living room for conversation, reading, listening and study activities. Plan the family room for a game table, dancing, hobbies and active play. The stereo might be in the living room, and the television in the family room.

The function of a family room varies with individuals so that sizes are not well established. A space smaller than 12 ft. x 16 ft. (3.6 m x 4.8 m) however, is not recommended.

Dining Room

Dining situations include family sit-down meals, holiday celebrations, snacks and quick meals. Dining areas are used for short periods of time, so the space may be used for another activity. The dimensions of dining areas should be adequate so chairs do not contact the walls when moved back from the table and so that walking around the table for activities is possible (Fig. 22). To select the table size, allow 24 in. (600 mm) per person for side chairs, and 30 in. (750 mm) for armchairs. The distance needed to rise from the table is 32 in. (800 mm) and 36 in. (900 mm) on the opposite side to edge past a seated person. Plan space for a hutch or a china cabinet.

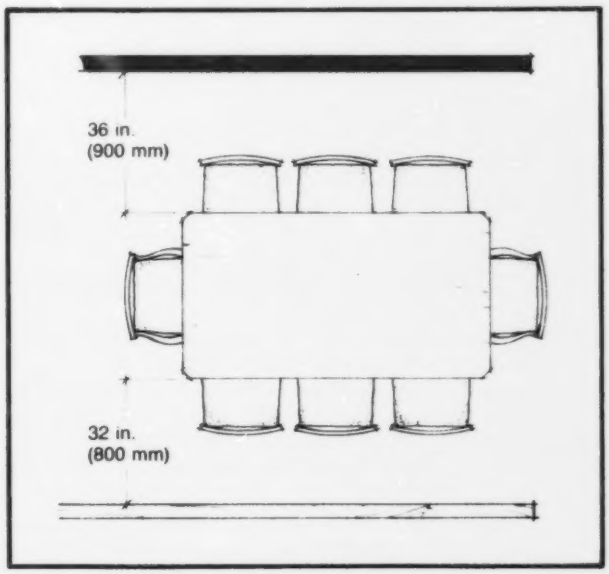


Figure 22. Dining room clearances

Determine whether two established eating areas such as a kitchen nook and a formal dining area are necessary. Consider the amount of room needed for both areas. Will the second dining area be used enough to justify having it? Does the family lifestyle require a formal dining area? If incorporating a formal dining room, perhaps a snack counter in the kitchen rather than a typical kitchen table will meet the needs for everyday eating purposes. A snack bar is not as flexible as a table and chairs. If space is limited, plan the dining area as part of the living room to allow expansion of the table and to reduce the space required for dining.

If space is provided for eating family meals in the kitchen, locate it outside but convenient to the food preparation area.

Sizing Rooms

Before planning room sizes, determine the size of furniture. Next, draw the room to scale on graph paper (at back). Place scaled furniture templates (Extension Service Home Fact "Furniture Templates") on the plan and indicate traffic paths. After evaluating the various alternatives, choose one that meets family requirements best.

Openings

Windows should be located to meet view, ventilation, natural lighting and solar requirements. They are an important factor when establishing an indoor environment. To achieve a balanced exterior design, align windows on all levels.

The horizontal window is traditional, however, it can be difficult for small children to open, view out of, or use as an emergency escape.

Vertical windows are taller than they are wide. They create a desirable indoor feeling in terms of natural lighting, viewing and providing ventilation. In bedrooms, furniture placement is often improved due to the increased wall space.

If the window is to be an emergency exit, it should have a minimum net opening of 5 ft.^{2} (0.45 m^2), a minimum height of 24 in. (600 mm), an opening width of 20 in. (500 mm) and a sill approximately 44 in. (1100 mm) above the floor.

Windows are a poorly insulated area in the wall. Their design and placement are critical to a low energy home. Successful designs have minimal total window area with the majority orientated to the south for passive solar gain.

South-facing glass should not exceed 6 to 8 percent of the total living area to avoid overheating in the summer months. Window coverings such as louvered horizontal or vertical blinds, shutters or awnings can be used to help control overheating. Windows also lose considerable heat at night. Moveable window insulation such as swinging or rolling shutters, thermal curtains or shades, and between-the-glazing insulations are commercially available.

Windows and doors are constructed of wood, metal or plastic. Windows are an area where inferior quality will be evident with poor operation, drafts, and condensation problems.

Wood windows offer the best frame insulation properties but must be painted. A vinyl or metal covering over a wood core is an excellent maintenance-free alternative. Metal frames also come in protective, long-lasting finishes but are susceptible to higher heat losses and condensation.

The insulation value of windows depends on the glass, the frame and the air leakage. Proper weatherstripping and sealing after installation is vital in controlling air leakage and heat losses.

Foundations

A basement is preferred by most homeowners because it provides additional living space at a relatively low cost as compared to the same amount of space above grade. It is also the most common foundation.

The most common type of foundation material used is concrete. Although it is a very strong material, the cost of concrete is high and ready mix may be expensive to deliver to a farm site.

Preserved wood foundation construction refers to an extension of above ground framing techniques using pressure-treated lumber as the foundation material. All wood is pressure-treated with chemical preservatives. The concentrated levels of the permanently impregnated chemicals make the wood resistant to decay. The combination of pressure-treated materials and proper moisture control combine to make this alternative a viable house foundation choice. A wood foundation must be constructed by a competent individual who understands the importance of proper construction for this type of foundation.

Since a preserved wood basement is an extension of wood frame construction, insulating and finishing the interior is convenient and can be done to match the upper levels.

Consider building the house without a basement in areas with a high water table. The elderly or handicapped may prefer a house with no stairs for easy access to all living areas. Other advantages include a lower excavation cost on level site and a lower home silhouette. Disadvantages are difficulty in insulating and protecting plumbing from freezing in the crawl space. Without a basement, additional floor space must be provided for mechanical facilities and storage.

Energy Conservation

On the prairies, the energy requirements for heating the house in winter are high. Since heating the house is becoming more costly, it is essential to minimize heat losses. Heating costs on the farm are usually higher than in urban centers, and families are building for a long term; therefore, it is practical to incorporate energy conservation measures into the design of a farm home.

Solar heating systems can be of two types, active and passive. An active system relies on pumps, fans, solar collectors, and other mechanical measures and thus is very costly.

The passive solar approach includes orientating the house and the majority of windows to the south, increasing insulation levels, and installing an air-tight vapour barrier. If these measures are incorporated into the house construction, the end result will be an air-tight house with minimal heating requirements. All houses require stale air to be removed and fresh air to be introduced. In conventional houses, air changes occur through infiltration. With air-tight construction, a heat exchanger may be necessary to control ventilation and humidity levels.

Recent research indicates that the passive solar approach is more practical and economical in terms of payback period than the active solar system.

Building a House

Select or develop a suitable house plan that meets family requirements and is within the budget.

Shop around and look at show homes to become familiar with new building products.

Obtain working drawings and prepare specifications covering required materials. Some items to be considered are: windows and doors, exterior finishes, interior wall finishes, kitchen cabinets, floor coverings, heating system, location and number of electrical outlets, location and type of plumbing fixtures, hot water tank, water supply and sewage disposal system, energy conservation features.

Obtain several estimates of the proposed house plan from lumber yards and contractors.

Choose a reliable contractor and inspect at least one house that they have built to determine the quality of work. Enquire from the owners as to their experience with the contractor regarding quality of materials and reliability of progress.

Draw up a contract that is binding between the owner and the contractor.

Remodelling

Remodelling a house successfully involves imagination and the application of basic planning principles.

Some typical deficiencies of older houses are: kitchen-work areas poorly planned and equipped, minimal built-in storage and poor traffic patterns. Farm houses have additional problems: front entrance rarely used, kitchen improperly located for a view to the farmyard and driveway, the absence of a wash-up facility in the farm entry, usually no farm-business area and no place for the family to relax in while wearing work clothes.

Some of the assets of many older houses are: good exterior proportion, large rooms that respond well to re-shaping and structural soundness sometimes unmatched in new construction.

To determine if the house is worth the cost of remodelling, consider the following factors and obtain cost estimates for necessary changes:

- Can the floor plan satisfy good planning principles and the needs of the family? Consider rearranging existing space, as well as the addition of new space. If remodelling cannot produce a good floor plan, then remodelling should not be attempted, and the other factors shown below are unimportant.

- Is the house structurally sound enough to remodel?

- Will the windows need replacing?

- Is the house properly orientated to the road or service buildings?

- Is a new heating system needed?

- Is more insulation needed?

- Is the electrical system adequate?

- Is the water supply adequate and the sewage disposal system of satisfactory capacity?

- Is the family able to afford the financial burdens of remodelling?

Try to make the remodelled house comfortable, convenient and adequate for the family. But do not try to make a new house of it. Usually, you must tolerate some unlevel floors, perhaps a high ceiling and some style features not present in a newly constructed house.

There are no exact figures for the amount to invest in remodelling, but generally the maximum should not exceed one-half what is required for a new house.

Always do your planning on scale drawings that include wall thickness. Put your ideas on paper and try several alternatives. Use furniture templates to test out the possible layouts.

If remodelling, it may not be possible to completely restructure a house with a front to back progression of living room, dining room and kitchen, but you may be able to change the functions of the rooms. For example, you might remove all or part of a wall between living and dining room, turning the whole area into a family-living and dining center (Fig. 23). A rear bedroom with a wall common to a kitchen or living room might simply be converted to a larger family area.

Additions will re-orientate and change the way a home works so that it provides much more than just space. Tacking on a room where it is structurally convenient may not result in truly usable space required to accommodate a family's living habits.

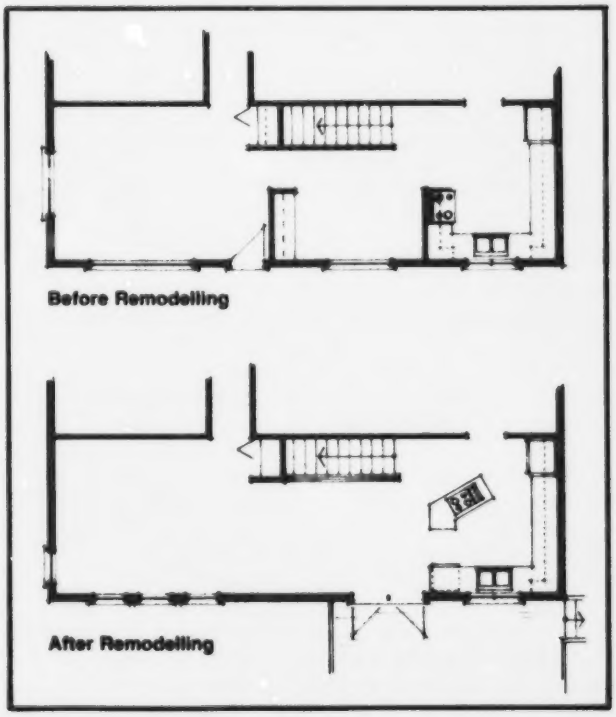


Figure 23. Family-living and dining all open

Basement Development

A damp and clammy basement is not suitable for use as living space. Cross-ventilation provided by open windows and exhaust fans in the laundry and washroom will reduce the amount of moisture in the air.

The use of a vapor barrier and insulation will prevent damp air from condensing on cold surfaces, provide comfort, and lower the cost of heating the house. Insulation should be installed to a minimum of R12 (RSI 2.1).

Porous basement walls can be a major source of basement humidity even though they do not leak. During and after a rain, porous walls may transmit moisture from surrounding soil for days or even weeks. A coating of waterproof epoxy paint or a rubber-base paint, intended for concrete or cinder block basement walls, will prevent some moisture transfer and decrease the amount of humid air to be exhausted. For cracks, use a quick hardening expansive cement or an epoxy-based compound. If the walls have a chalky or powdery surface, they will require cleaning first with a wire brush or a strong detergent to prevent new paint from flaking.

If there is a humidity problem, consider installing a dehumidifier. For a basement of approximately 1500 $ft.^2$ (139 m^2), use one with a capacity to extract 10 to 15 quarts (litres) of water per day. Place the unit so it can drain into a utility sink or outside through a window; otherwise, it will be necessary to empty the drip pan daily.

Placing a supporting wall down the center of the basement results in a desirable area along one side of the basement that may be developed into a spacious, flexible, attractive recreation space with no supporting posts.

The furnace, pressure system, water heater, water softener, workbench and tools should be located in one room away from the remaining basement. The area may also contain dust and sawdust so close it off from other basement rooms. These areas are noisy, so consider insulating the walls to isolate sounds from the adjoining living areas.

Most farm houses have provision for a vegetable storage area in the basement. If planning one, it is essential to have the down stairwell in line with the back door. The storage area should also be convenient at the base of the stairwell.

To maintain the quality and nutritive value of fruits and vegetables, it is important that the storage area provide controlled ventilation, humidity and temperature levels. The booklet "Home Storage Room for Fruits and Vegetables" outlines the design requirements for a basement cold room and is available from Saskatchewan Agriculture agricultural representatives.

Consider the family's requirements when determining the size of the recreation room. Space for activities such as ping-pong, pool, television watching and listening to music should be included in the overall layout. A minimum width of 12 ft. (3.6 m) is recommended.

When choosing finishing materials, one of the first decisions is the type of wall covering to select. Consider the area when evaluating the alternatives; for example, wood panelling creates a warm and cozy atmosphere and is a good choice for the family room, drywall provides flexibility in color schemes, vinyl wallpaper is recommended for moisture-producing areas such as the bathroom and the laundry, and paint on concrete walls is adequate for the furnace and the cold room. The next step is to decide on the type of ceiling to install. There are three from which to choose—drywall, tile and suspended acoustical panels. Consider the area and the comparative costs. Drywall is the least expensive. If the room has numerous heating ducts and plumbing pipes hanging from the floor joists, a suspended ceiling is the best choice. Before applying the ceiling finish, all electrical, heating and plumbing work in the ceiling space should be complete. Check that the finished floor to ceiling height is 7 ft. 6 in. (2.25 m) for a living or a sleeping area and a minimum of 7 ft. (2.1 m) for other spaces.

If the basement floor is reasonably smooth and remains dry, it is a suitable base for a variety of floor coverings such as tile, wood or carpeting. Carpeting can be used, but choose one with a stain-resistant fiber that is easily cleaned. The indoor-outdoor (polypropylene) carpet is highly recommended. For additional protection against dampness, apply a clear waterproof coating before installing the flooring material. If the concrete slab is too uneven for a tile floor or if moisture and condensation periodically dampens the slab, a vapor barrier can be laid over the slab and a 2 in. (50 mm) to 3 in. (75 mm) topping of concrete or a raised wood platform laid over the slab can be added.

Living areas should be planned with natural and artificial light and accompanied with accent lighting for decoration. The amount of natural light will determine the choice of colors; darker tones where there is ample light and light colors when light is minimal. A combination of proper light and colors will affect the mood and efficiency of a room.

Finishing the basement is often done by family members over a period of time. It is practical to plan the total project even when the development occurs in stages. Remember to have the basement and the main floor plans designed in relation to each other. An advantage of living in a rural setting is that it is possible to build the basement first to use as living space and proceed with the main floor as time and funds are available.

Planning for Expansion

Few new house plans are conceived with the idea that one day the house might easily be expanded to meet additional needs. However, an expandable house might be the answer for a young couple with no children and limited finances (Fig. 24). By initially planning for a house that can easily be added to at a later date, you can have a house which meets the basic requirements for function, economy and individuality.

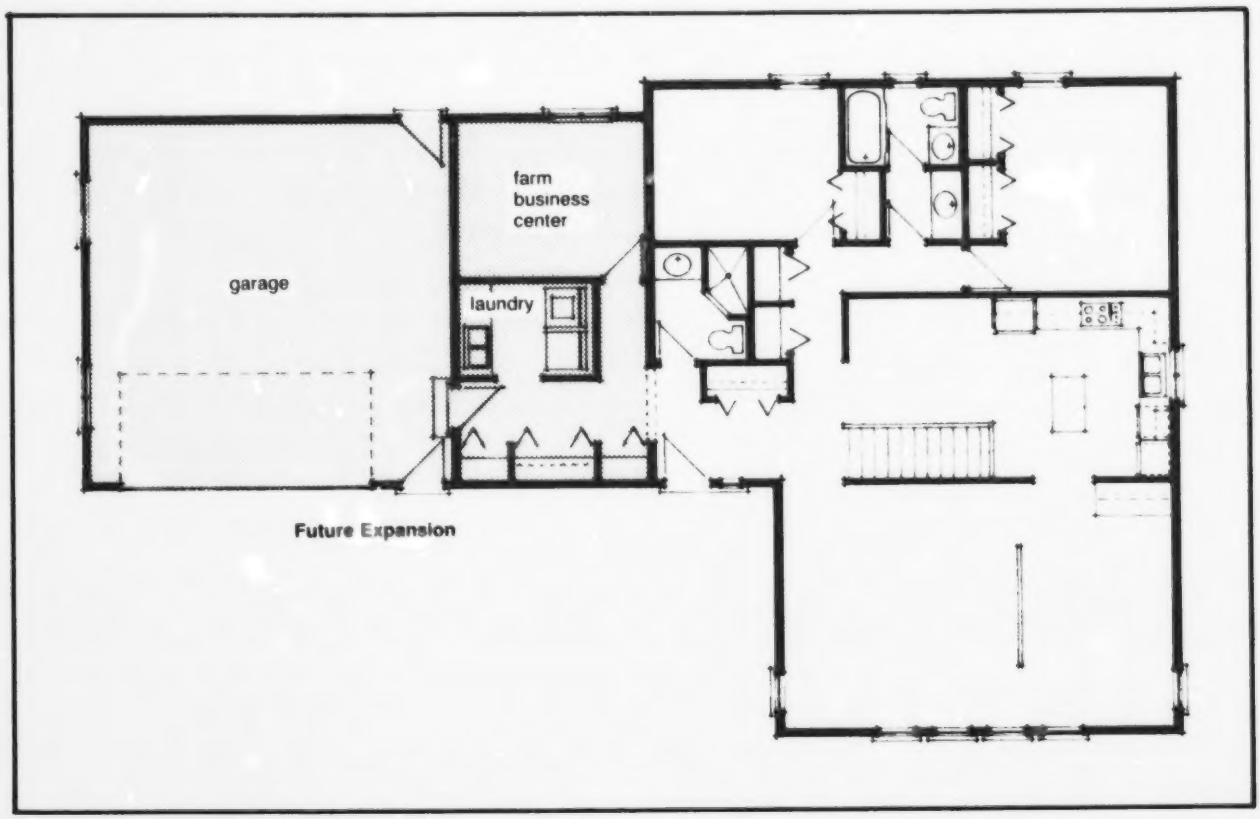


Figure 24. Expandable house plan

Guidelines for Planning the Rural Home

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In this publication, imperial units are used as the primary units of measurement. The SI (metric) units in brackets are not necessarily exact conversions, but are equivalent practical conversions and are values that would be used if the SI system was used alone.

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